

value, indicating a NAV should be set by the mobile device, being in the Duration value (block 630) or in response to a value indicating the radar beam is within the predetermined distance to the access point (block 640).

[0064] Although the description above is primarily directed to Wi-Fi, the techniques may be used for other wireless systems. For instance, the examples may be used for LTE systems as described in reference above to the contention-free accesses 517. Transmission and reception herein may be performed through known techniques, such as those described by a number of 802.11 standards or LTE standards.

[0065] Embodiments of the present invention may be implemented in software (executed by one or more processors), hardware (e.g., an application specific integrated circuit), or a combination of software and hardware. In an example embodiment, the software (e.g., application logic, an instruction set) is maintained on any one of various conventional computer-readable media. In the context of this document, a “computer-readable medium” may be any media or means that can contain, store, communicate, propagate or transport the instructions for use by or in connection with an instruction execution system, apparatus, or device, such as a computer, with one example of a computer described and depicted, e.g., in FIG. 2A. A computer-readable medium may comprise a computer-readable storage medium (e.g., memory(ies) 455, 425 or other device) that may be any media or means that can contain or store the instructions for use by or in connection with an instruction execution system, apparatus, or device, such as a computer. However, the computer-readable storage medium does not encompass propagating signals.

[0066] If desired, the different functions discussed herein may be performed in a different order and/or concurrently with each other. Furthermore, if desired, one or more of the above-described functions may be optional or may be combined.

[0067] Although various aspects of the invention are set out in the independent claims, other aspects of the invention comprise other combinations of features from the described embodiments and/or the dependent claims with the features of the independent claims, and not solely the combinations explicitly set out in the claims.

[0068] It is also noted herein that while the above describes example embodiments of the invention, these descriptions should not be viewed in a limiting sense. Rather, there are several variations and modifications which may be made without departing from the scope of the present invention.

[0069] The following abbreviations that may be found in the specification and/or the drawing figures are defined as follows:

- [0070]  $\mu$ s microseconds
- [0071] AP Access Point
- [0072] BSS Basic Service Set
- [0073] CSMA-CA Carrier Sense Multiple Access-Collision Avoidance
- [0074] CTS Clear to send
- [0075] DARPA Defense Advanced Research Projects Agency
- [0076] dB decibels
- [0077] DCF Distributed Coordination Function
- [0078] ETSI European Telecommunications Standards Institute,
- [0079] FCC Federal Communications Commission
- [0080] IFS Interframe Sensing

- [0081] km kilometer
- [0082] KW kilowatt
- [0083] LAN Local Area Network
- [0084] LTE Long Term Evolution
- [0085] MAC Medium Access Control
- [0086] ms milliseconds
- [0087] NAV Network Allocation Vector
- [0088] NDP Null Data Packet
- [0089] PCAST Presidential Council of Advisory for Science and Technology
- [0090] SSPARC Shared Spectrum Access of Radar Bands by Communications
- [0091] STA Station, a wireless device
- [0092] TDD Time Division Duplex
- [0093] UL uplink
- [0094] Wi-Fi Wireless Fidelity, a wireless local area network (and products) that are based on the Institute of Electrical and Electronics Engineers (IEEE) 802.11 standards

[0095] WLAN Wireless Local Area Network

1. A method, comprising:

determining information about a radiation pattern of a radar beam, wherein the radar beam uses a bandwidth; determining based on the information about the radiation pattern whether a channel using at least a portion of the bandwidth is or is not available for access by mobile devices; and

transmitting to the mobile devices one or more specific broadcast frames by a wireless access node configured to advertise whether the channel is or is not available for access by the mobile devices.

2. The method of claim 1, wherein transmitting further comprises periodically transmitting the one or more specific broadcast frames, wherein a period of transmission is based at least on change in position in azimuth or elevation angle of the radar beam.

3. The method of claim 2, wherein the access is contention-based access, and wherein a current specific broadcast frame is configured to advertise whether the channel is or is not available for access by comprising a value indicating whether a mobile device may perform one or more transmissions, if contention for the channel is won by the mobile device, that will cross a time at which a subsequent specific broadcast frame is scheduled to be transmitted based on the period or cannot perform the one or more transmissions that will cross the time at which the subsequent specific broadcast frame is scheduled to be transmitted.

4. (canceled)

5. (canceled)

6. (canceled)

7. The method of claim 1, further comprising transmitting at least some of the information about the radiation pattern of the radar beam in beacon and probe response frames.

8. A computer program product comprising a computer-readable storage medium bearing computer program code embodied therein for use with a computer, the computer program code comprising code for performing the method of claim 1.

9. An apparatus, comprising:

one or more processors; and

one or more memories including computer program code, the one or more memories and the computer program code configured, with the one or more processors, to cause the apparatus to perform at least the following: